

that it is due to a simple physical or chemical change, but concludes that the evidence points to the presence of some form of bacteria. Prof. Burrill in discussing the paper stated that he had also given attention to the subject, and that while he did not doubt it was due to germs yet he had been unable to decide upon the particular kind. The blue milk spoken of in the title is an incidental accompaniment of the ropy cream, and is not the blue milk mentioned in works on bacteria.

Mr. Smith's paper is based upon observations of microbes obtained from three separate outbreaks of swine plague—one in the District of Columbia, one in Nebraska and one in Illinois. The microbes were identical in morphological, but different in biological characters. This variation is all the more interesting because not before admitted with any of the pathogenic organisms heretofore studied.

A considerable discussion followed the reading of Dr. Salmon's paper on the theory of immunity from contagious diseases, participated in by Drs. Minot, Arthur, Burrill, Bowditch and the author. Dr. Minot objected to the use of heated bouillon for testing the exhaustion theory. Dr. Arthur suggested that sterilization in such a case might properly be effected by filtration through porcelain; he also spoke of his own studies on pear blight as in some measure supporting the theory. Dr. Bowditch asked if the theory might not be extended to the lessened effects experienced from the continued bites of insects. The author thought it could.

---

### Botanical Club of A. A. A. S.

The meetings of the Botanical Club have increased in attendance and interest from its organization, three years ago, at Minneapolis. The fourth meeting, just held at Buffalo, brought together more botanists than ever before, and still further compacted an organization which has in it the promise of great usefulness. Ninety-one names were entered upon the register slips, but the knowledge that several botanists neglected to register makes it more than probable that over one hundred were in attendance. This gives a very large percentage of botanists in the general association, and also adds weight to the thought expressed by some that there should be a section of botany.

The term botanist, of course, includes a great variety of persons, from those merely interested to those professionally engaged in botanical work, but as one of the objects of the club is to stimulate a general interest in the subject, all such persons are legiti-



mately included. It is not easy to classify the departments entered upon the registration blanks, but the expressed preference of the ninety-one botanists entered may be summed up as follows: General botany, 11; flowering plants and ferns, 17; cryptogams, 15; minute anatomy, 4; chemical botany, 2; agricultural botany, 1; medical botany, 1; physiology, 3; morphology, 2; no preference stated, 35.

Four meetings were held, at 9 o'clock A. M., and the attendance was always large. As these meetings were supplemented by excursions and receptions given by the local club, it may be said that the botanists saw a great deal of each other. The social feature was especially prominent and a general feeling of good fellowship was always present. The papers presented to the club, as a rule, were more substantial and more carefully prepared than ever before. As most of them will be published in full or by abstract in this and subsequent numbers of the GAZETTE, they will not be referred to at any length in this account. Following is a brief summary of the proceedings and discussions of the club:

Prof. J. M. Coulter was chairman for the year, but in his absence on Tuesday, Prof. W. J. Beal presided. Dr. J. C. Arthur, the secretary-elect, was compelled to resign his position, owing to his duties as secretary of the section of biology, and Dr. N. L. Britton served in his place.

THURSDAY, August 19, 9 A. M. After a few introductory remarks by the chairman, a letter from Dr. Asa Gray was read to the club, followed by his paper entitled "Essay toward a revision of *Dodecatheon*," both of which are published elsewhere in this issue. Prof. E. W. Claypole then read a paper upon the potato rot. During the fall of 1885 this parasite was very abundant in some parts of the country, and the author undertook to study it in his own locality (Akron, Ohio). After describing the structure of a potato tuber, he observed that the parasite attacked the eyes and affected the fibro-vascular region of the tuber, leaving the interior starch cells intact.

Mr. F. V. Coville read a paper upon *Aconitum Noveboracense* Gray, n. sp., as occurring at Oxford, New York.

Prof. F. L. Scribner displayed an apparatus he had been using for making microscopic drawings. It was a device for using the camera lucida with simple lenses, and thus obtaining an amplification of a few diameters. Questions were asked and suggestions made by Professors Burrill and Beal.

Dr. W. J. Beal displayed a contrivance for facilitating laboratory work. It consisted of a device for holding all the ordinary



laboratory accessories used by the student, thus enabling him to get them out and put them away speedily, and to have them always convenient while at work. The box was arranged to hold everything, from sandpaper to objectives. In the discussion that followed Prof. Pillsbury thought that holes bored in a block would be less expensive for holding reagent bottles than box-like compartments. Dr. Farlow thought it rather dangerous to have reagent bottles placed so near objectives.

A communication from Dr. A. Gattinger was read, in which was described *Hypericum lobocarpum*, a new species from the mountains of Tennessee.

W. H. Seaman, of Washington, read a paper on *Marsilia quadrifolia*. Plants of this species had been procured from Germany by the Fish Commission and cultivated as a fish food. Proving to be rather injurious to fish than otherwise, an attempt was made to destroy it. But the plant has spread and is likely to become permanently introduced.

Dr. Beal stated that *Marsilia* had become a thriving plant in central Michigan.

FRIDAY, August 20, 9 A. M. Rev. Thomas Morong had a few words to say concerning *Marsilia*. He said that it would take possession and drive out everything else, even witch grass. He had seen a small patch take possession of a pond and drive out every other aquatic. The first put out was twenty years ago, at Bantam Lake, Litchfield, Conn. "I find it has gone along the shore for half a mile and has taken complete possession of the ground."

Professor L. M. Underwood, in continuing the discussion, said that *Marsilia* was originally found at Bantam Lake and also at another widely separated locality. When first found it was in small quantities. He would ask Mr. Morong how he would account for that fact.

Mr. Morong replied by stating that Dr. Gray had recently sent him a specimen of *Potamogeton crispus* from Arizona, and he would like to ask how it had skipped from the Atlantic seaboard to Arizona.

The discussion was further continued by Professor Underwood with reference to other species.

Professor T. J. Burrill next described simple and inexpensive ways of making apparatus for fluid cultures and sterilizing. The author will fully describe these devices in the next number of the GAZETTE. It is sufficient to say that they exactly meet the demands of many workers who are unable either to purchase or devise such appliances.



Mr. Morong exhibited some *Potamogeton fluitans* from Niagara river.

Miss Lillie J. Martin read a paper in which she recommended the use of petroleum spirit (boiling  $25^{\circ}$ – $45^{\circ}$  C.) for the preservation of plant tissues. The subject was discussed by Mr. Seaman, Professor Barnes and Miss Martin.

Professor B. E. Fernow exhibited a branch from a chestnut which bore spikes of small burrs, and at a distance looked like a chinquapin. The tree grew wild in a wood-lot, in Lehigh Co., Pennsylvania. All the other trees have the same condition of development, and no cause for this freak could be discovered. He was inclined to think that it was self-fertilizing, but no male flowers were discovered.

Professor Underwood asked if there was any evidence of an injury, as he had often observed that injuries in certain plants tend to produce abnormal development, but Mr. Fernow had discovered none.

Professor Burrill called attention to the fact of the side shoots of Indian corn, near the base, bearing both sorts of flowers, the tassels coming out in the ordinary way, and in the tassels more or less female flowers. In husk corn this is a common thing.

The discussion was continued by Messrs. Beal, Farquhar and Fernow, and Mrs. Walcott.

Dr. W. J. Beal spoke of the escape of the seeds of *Sporobolus cryptandrus*.

MONDAY, August 23, 9 A. M. The time for the election of officers for the ensuing year having arrived a committee on nominations was appointed, and their report as follows unanimously adopted: For chairman, M. S. Bebb, of Rockford, Illinois; for secretary, Mrs. E. L. Britton, of New York city.

F. L. Scribner read a paper upon the occurrence of the orange scab in Florida, a disease which is comparatively new and which threatens to destroy nursery stock.

Prof. J. H. Pillsbury described a method of making lantern slides for micro-photographs, which is really very simple and ingenious. He obtains some tracing gelatin (which comes in very fine sheets), taking care to select sheets that are not much scratched. They can be obtained of every color and form. The piece of gelatin is put over any desired diagram, and with a very fine steel point (such as lithographers use) the diagram can be traced upon the gelatin. Slipping the gelatin between two pieces of glass a lantern slide is the result, which is convenient for all kinds of illustrations. These slips of gelatin can be purchased at almost any lithographic establishment. In this way a teacher



can reproduce accurately for class illustration any published figure, and with great economy of time and money.

Professor Burrill stated that he had made lantern slides from blackboard drawings. By making the chalk lines even and dense a photograph can be taken with very good effect.

Professor Barnes upon inquiry brought out the fact that the scratches upon the gelatin appear as black as ink lines against a white surface.

Dr. N. L. Britton read a paper upon the herbaria of Columbia College. The description of the herbarium cases caused considerable discussion, by Professors Pillsbury, Britton, Beal, Barnes, Sargent, etc.

Prof. Barnes thought that the most commendatory convenience spoken of was the tightly fitting glass doors.

In the discussion with reference to dust-proof devices, it was generally the opinion that a working herbarium can not be made dust proof, as the doors are of necessity open so much of the time, and the only way to keep the specimens in proper condition is to exercise "eternal vigilance."

Dr. N. L. Britton read a paper upon *Anychia dichotoma*, of which he discriminated two forms, which might possibly merit specific rank.

TUESDAY, August 24, 9 A. M. Professor E. W. Claypole read a paper upon the appearance of immigrant plants in the neighborhood of Akron, Ohio, which was discussed by Messrs. Morong and Coville.

Professor F. L. Scribner then presented a paper upon the botanical character of the black rot of the grape.

The following resolutions were then adopted:

*Resolved*, That the members of the Botanical Club of the A. A. A. S. heartily thank the U. S. Commissioner of Agriculture for his promptness and energy shown in appointing an able investigator to prosecute the mycological work recently inaugurated in the Department of Agriculture, and in giving him opportunities to study the fungi which are injurious to cultivated plants. While they are gratified with the beginning made, they express the hope that this work will be still further supported. The botanists here assembled hereby renew their promise to render the U. S. Commissioner of Agriculture any assistance in their power toward making investigations in any department of botany.

*Resolved*, That the hearty thanks of the Botanical Club of the A. A. A. S. be tendered to the Botanical Club of Buffalo for the bountiful hospitality which they have shown to their brethren from abroad, and not less for the graceful and courteous manner in which this hospitality has been extended, with the promise that wherever our meetings may be held in the future every visiting Buffalo botanist will find a warm reception in our hearts and homes.

The presiding officer tendered the thanks of the club to Dr.



Arthur for his efficient work in arranging for their meetings, and the club adjourned to meet next year at 9 A. M. on the second day of the meeting of the A. A. A. S.

---

### Entertainment of the Botanists at Buffalo.

Fortunately for the Botanical Club of the Association, Buffalo possesses a very active Botanical Club, and the members of this company vied with each other in devising and executing plans for the entertainment of the visiting botanists. Time did not allow the placing on the program of a tithe of the generous ideas their hearts suggested, but their spirit was shown by the numberless little things which were done to make pleasant the meetings. Three special rooms were set apart for the accommodation of the club, and the unavoidable school-room bareness was relieved by the easy chairs, pictures and statuary which thoughtfulness had provided.

The special reception announced upon the program was held on Thursday evening, from 8 to 11, at the residence of Hon. David F. Day, on Cottage street. With a view to making strangers feel personally welcome, the local club took the trouble to issue special cards of invitation, supplementing thus the general invitation, and in response to these two hundred and fifty cards fully as many people assembled at Mr. Day's hospitable home. Thursday had found the ladies of the club busy in decorating the four spacious rooms given to the reception. The mantels were banked with native flowers, and vases, bowls and dishes held a profusion of wild blossoms, some of which puzzled those not acquainted with the Buffalo flora to name. Of all these, most honored was *Epipactis Helleborine*, the rare orchid of Syracuse and Buffalo. Many of the native flowers were supplied by Mr. Day's grounds—which constitute, by the way, a botanical garden of no mean proportions—while others represented much active collecting by the members of the club. Beside all these, every available place was filled with exotics, whose graceful foliage or peculiar forms added much to the beauty of the rooms. The blooming of a *Cereus* was awaited with interest, but in vain, as it did not open until the following night. The center piece on the well-laden table was a huge block of ice hollowed out and filled with wide-open water lilies.

As everything possible in the way of decoration was done to make the rooms beautiful, so was everything possible done to make the guests feel at ease and to relieve the too common stiff-